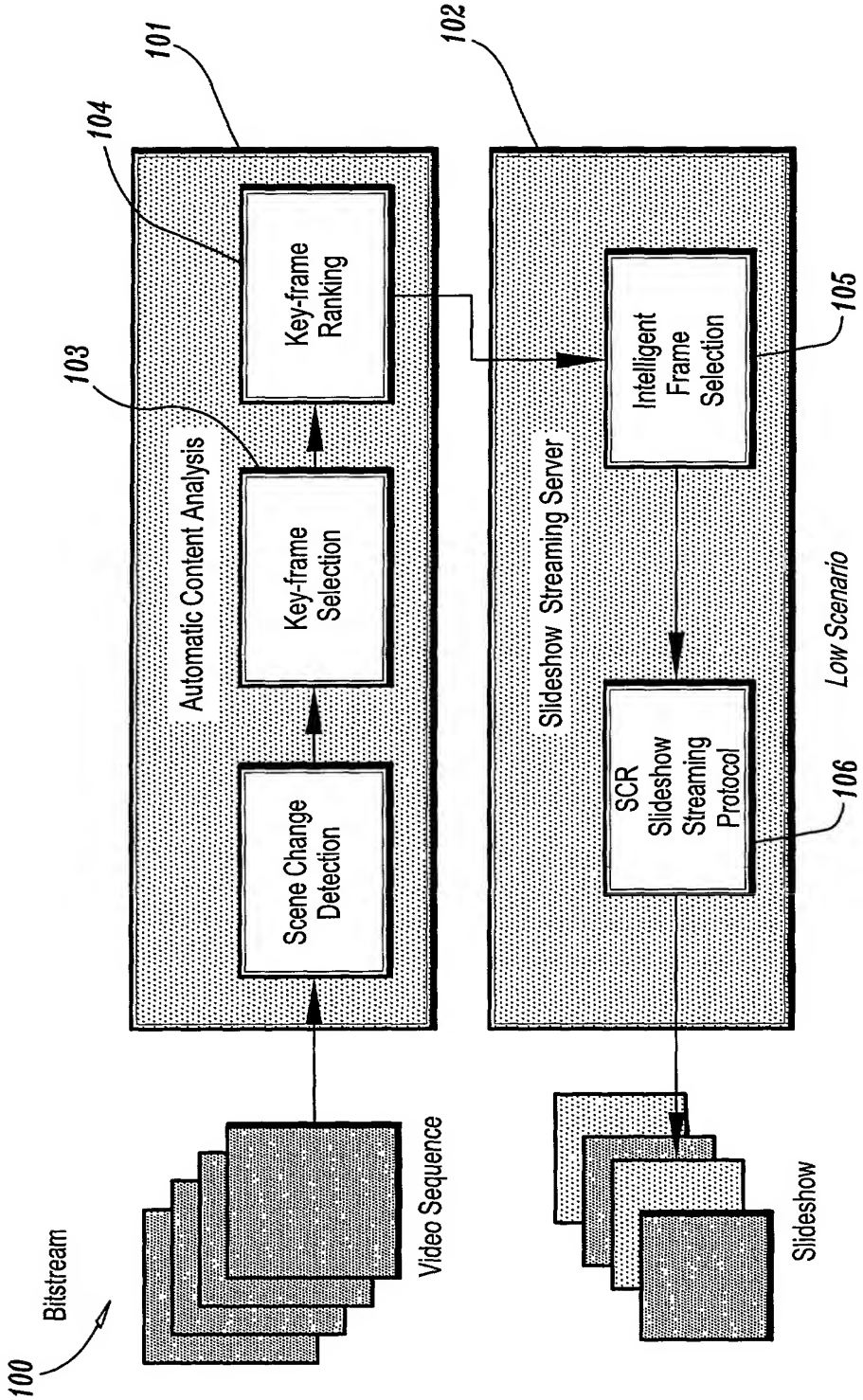

100
Bitstream
Video Sequence
101
Automatic Content Analysis
Scene Change Detection
Key-frame Selection
Key-frame Ranking
102
Slideshow Streaming Server
Intelligent Frame Selection
SCR Slideshow Streaming Protocol
Slideshow
103
104
105
106
Low Scenario

FIG. 1

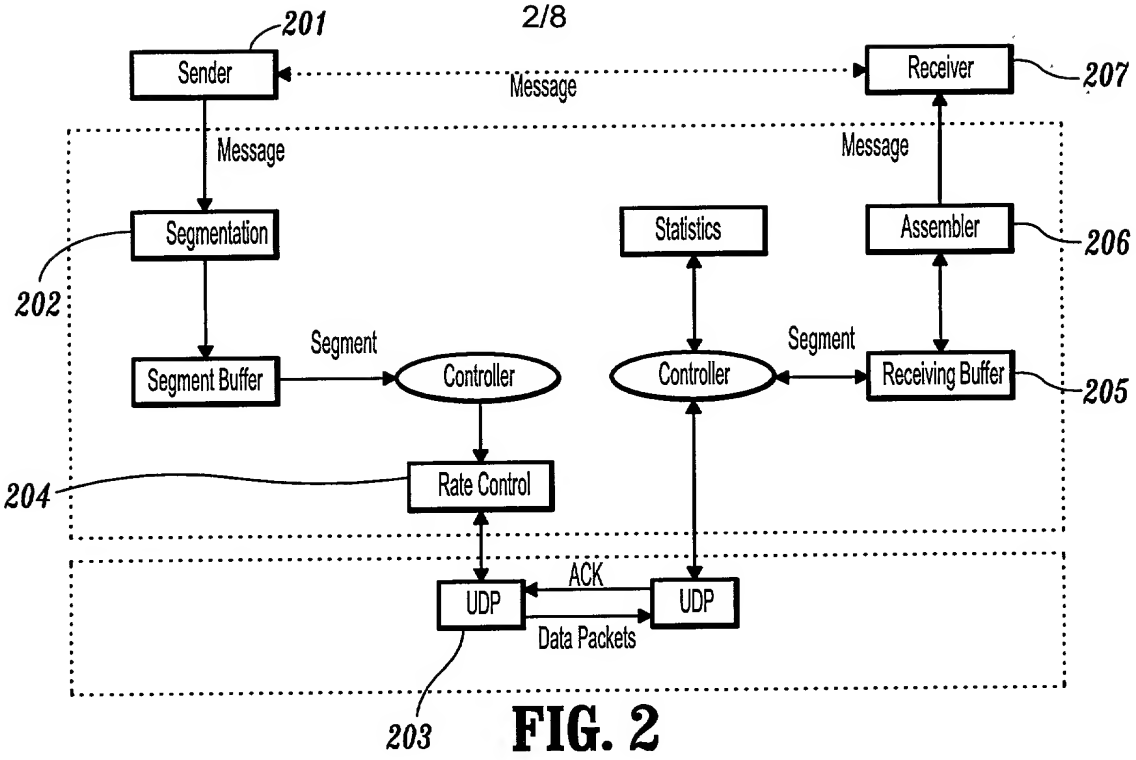


FIG. 2

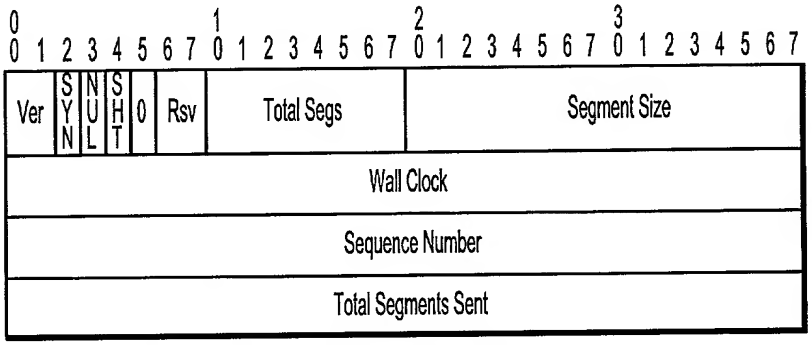


FIG. 3a

(a) Data Packet Header

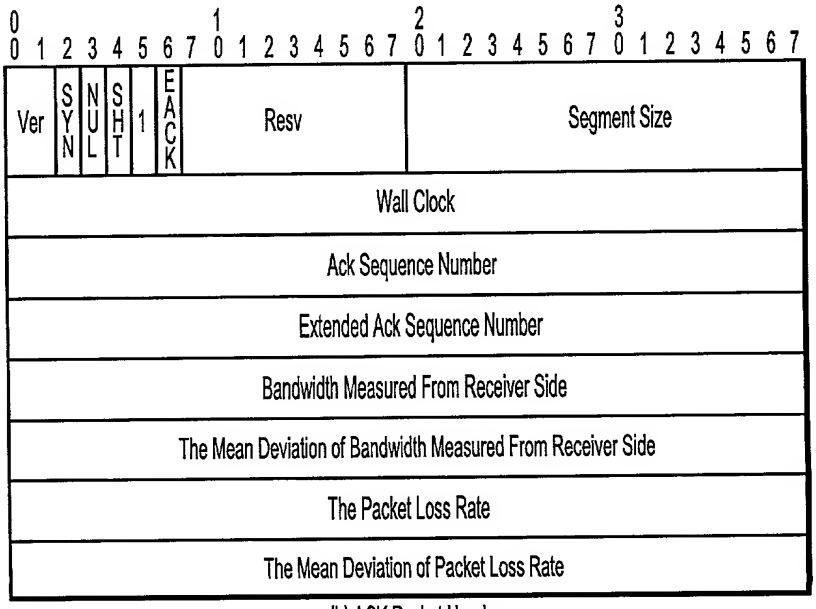
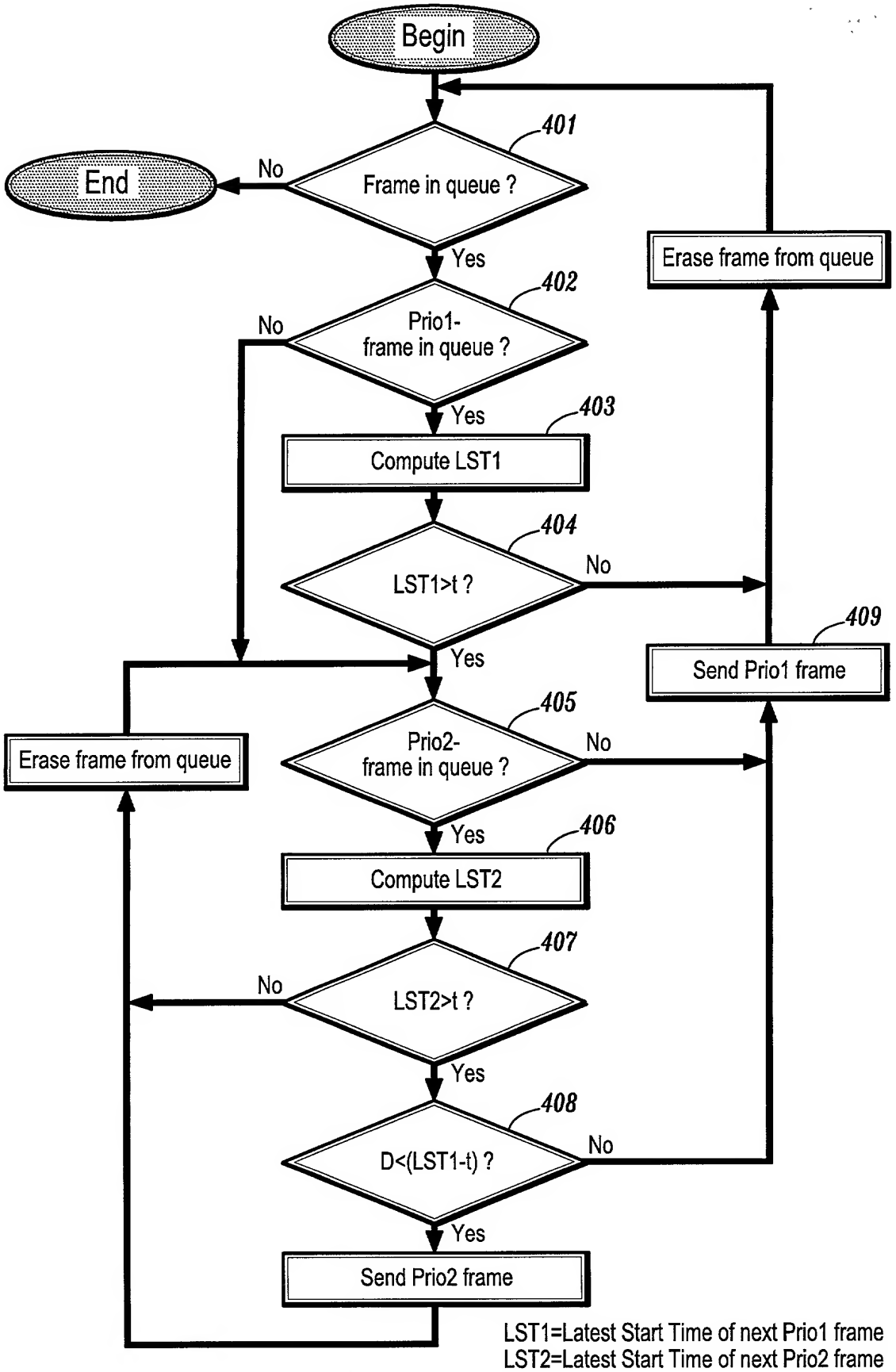


FIG. 3b

(b) ACK Packet Header



LST1=Latest Start Time of next Prio1 frame
LST2=Latest Start Time of next Prio2 frame
t=current time
D=Duration of transmission of current Prio2 frame

FIG. 4a

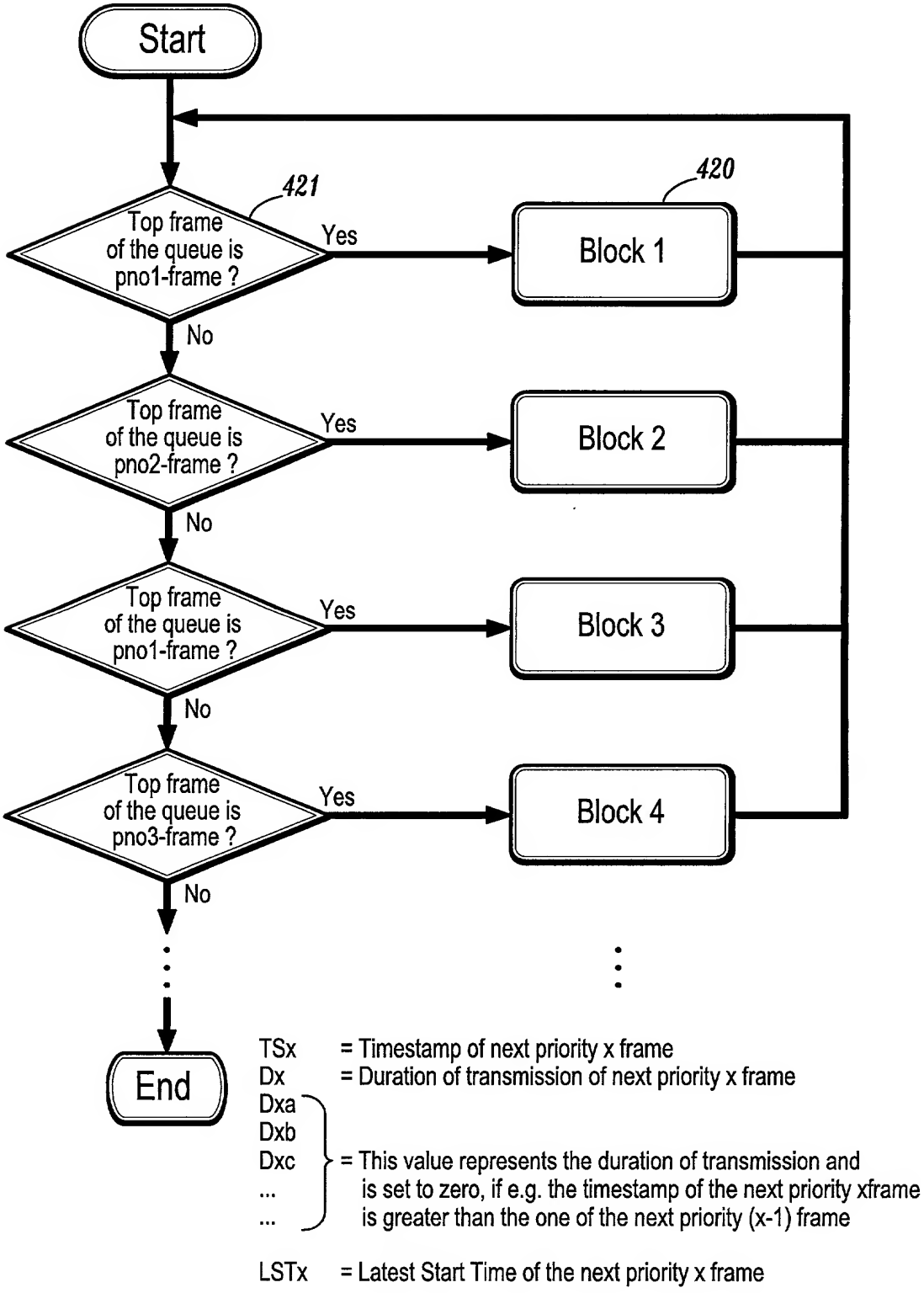

Start
421
Top frame of the queue is pno1-frame ?
Yes
420
Block 1
No
Top frame of the queue is pno2-frame ?
Yes
Block 2
No
Top frame of the queue is pno1-frame ?
Yes
Block 3
No
Top frame of the queue is pno3-frame ?
Yes
Block 4
No
End
TSx = Timestamp of next priority x frame
Dx = Duration of transmission of next priority x frame
Dxa
Dxb
Dxc
...
...
= This value represents the duration of transmission and is set to zero, if e.g. the timestamp of the next priority xframe is greater than the one of the next priority (x-1) frame
LSTx = Latest Start Time of the next priority x frame

FIG. 4b

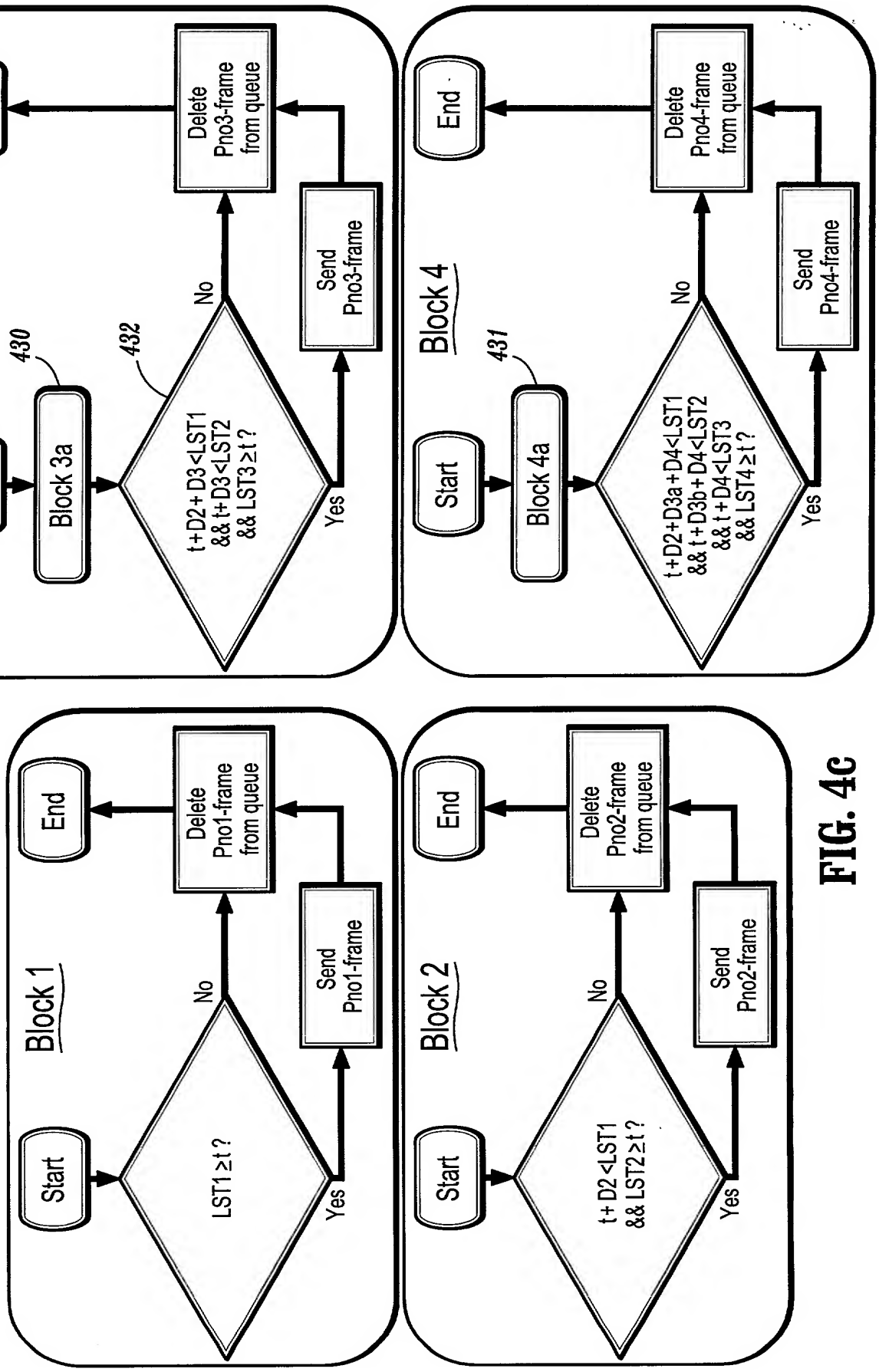
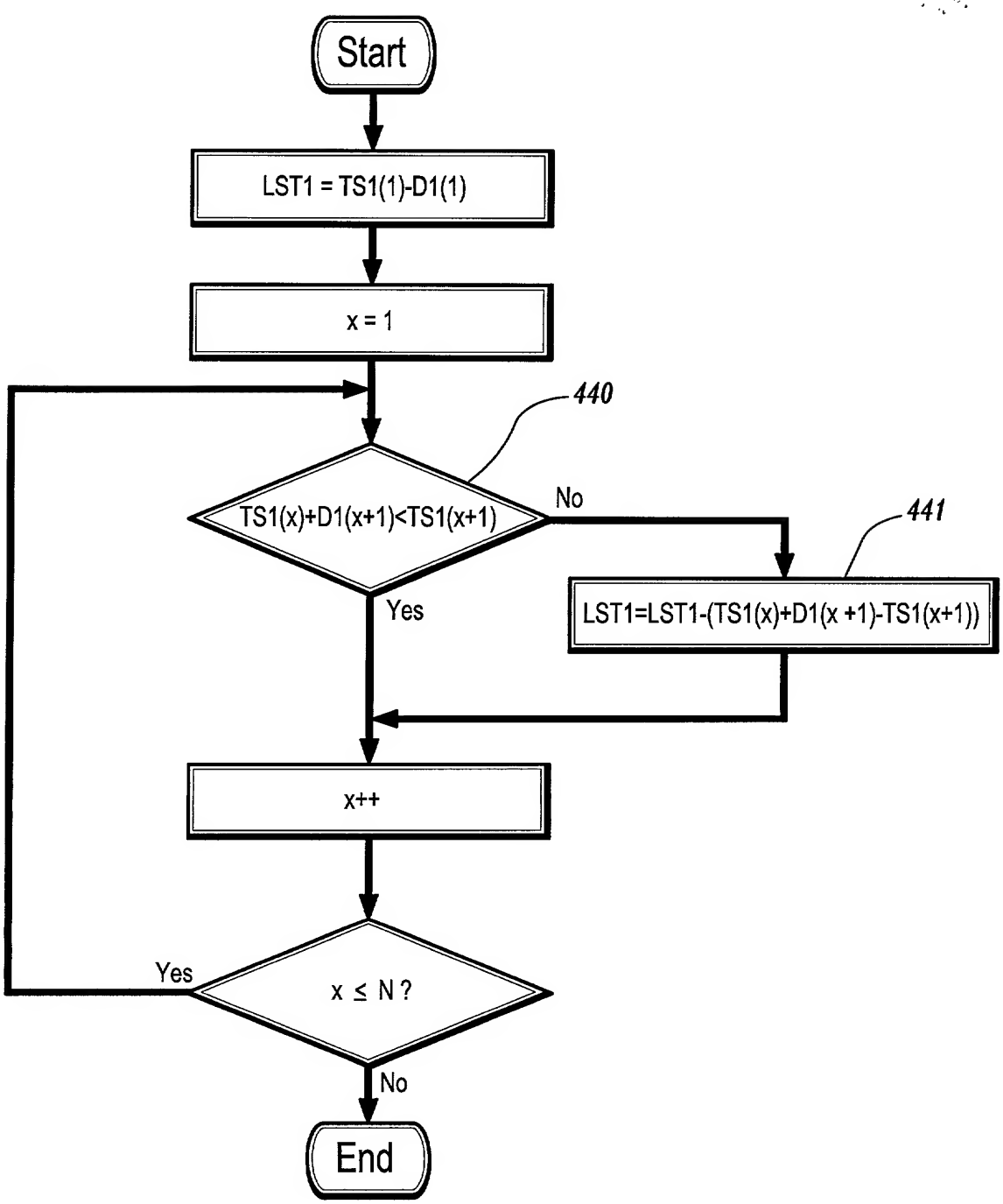

Block 1
Start
LST1 ≥ t ?
No
Yes
Send Pno1-frame
Delete Pno1-frame from queue
End
Block 2
Start
t + D2 < LST1 && LST2 ≥ t ?
No
Yes
Send Pno2-frame
Delete Pno2-frame from queue
End
Block 3
430
Start
Block 3a
432
t+D2+D3<LST1 && t+D3<LST2 && LST3 ≥ t ?
No
Yes
Send Pno3-frame
Delete Pno3-frame from queue
End
Block 4
431
Start
Block 4a
t+D2+D3a+D4<LST1 && t+D3b+D4<LST2 && t+D4<LST3 && LST4 ≥ t ?
No
Yes
Send Pno4-frame
Delete Pno4-frame from queue
End

FIG. 4c



N = number of frames which shall be considered
x = index-variable
LST1 = Latest Start Time for next priority one frame
TS1(x) = Timestamp of next (x1=1) priority one frame. timestamp of the one after the next priority one frame (x=2)...
D1(x) = Duration of transmission of the priority one frame indexed by the value of x

FIG. 4d

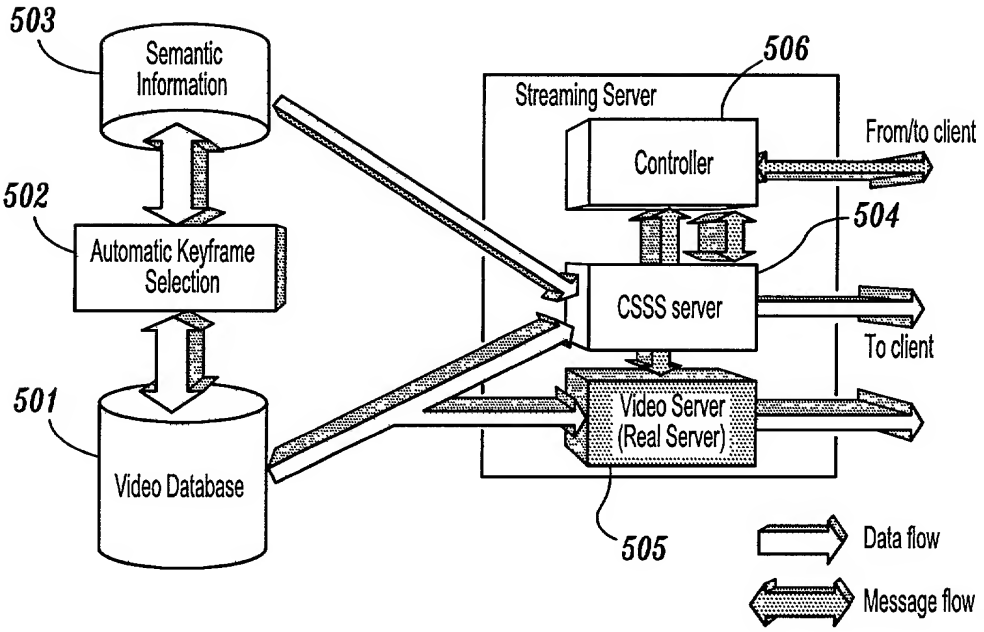

503
Semantic Information
506
Streaming Server
From/to client
Controller
502
Automatic Keyframe Selection
504
CSSS server
To client
501
Video Database
Video Server (Real Server)
505
Data flow
Message flow

FIG. 5

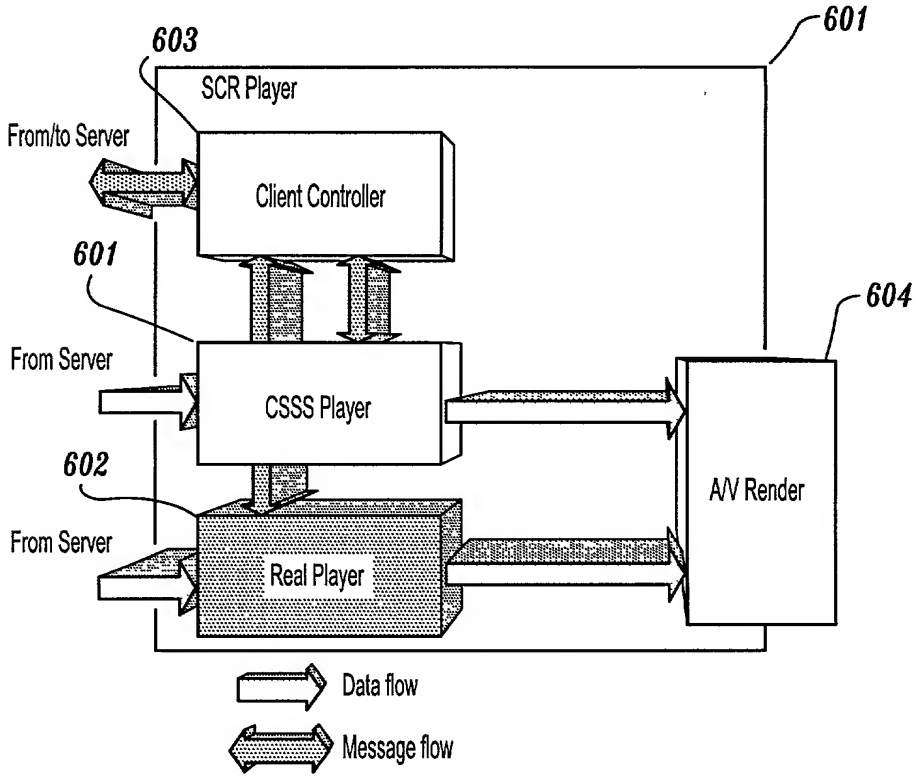

601
603
SCR Player
From/to Server
Client Controller
601
604
From Server
CSSS Player
602
A/V Render
From Server
Real Player
Data flow
Message flow

FIG. 6

frame	f1	f2	f3	f4	f5	f6	f7	f8	f9	f10	f11	f12	f13	f14	f15
priority	1	2	2	2	2	1	2	2	2	2	1	2	2	1	2
timestamp	0	3	4	5	7	8	10	13	14	15	16	17	18	19	21
transmission time	2	1	2	3	1	4	2	1	2	1	3	1	2	3	1

FIG. 7a

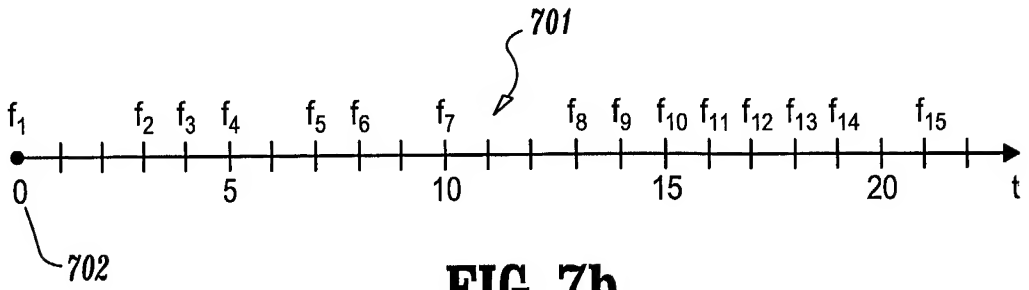


FIG. 7b